

Crops, Soils and Fertilizers

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Inquiries of Progressive Farmer readers cheerfully answered.

TO INCREASE GRAIN CROPS.

Treatment of Oats, Wheat, Rye or Barley for Smut.

Messrs. Editors:—Very few farmers realize the full extent of the injury suffered by these cereal crops through the inroads of smut. The smutted plants are dwarfed, therefore escape observation completely that even very observing farmers often allow as much as 25 to 35 per cent of smut to pass unnoticed. Smut is rarely less than 10 per cent in oats and is frequently 16 to 25 per cent. This is a complete loss to the farmer as it costs as much in seed, land and tillage to raise the smutted plant as to raise the full head. All of this loss can be turned into clear profit at a cost of about one cent per acre for material and a slight outlay of labor. The United States is losing annually a preventable loss of about \$1,000 from the smut of oats alone. Our State is yearly losing between 10 to 20 per cent of her annual oat crop ranging in value at \$991,516.

RATIONALE OF TREATMENT.

Smut of grains is caused by a fungus, the spore is the reproductive body of fungi, depending to the seed in higher plants) of the seed in the seed to the young grain. Smutted plants in the field, and in threshing their spores in the air. These spores are carried about by the wind, many of them finding lodgment in the seed of neighboring plants. They are thus planted with the grain in same moisture, warmth, etc., which starts them into renewed life quickens the smut. It is that many young plants are, in early life, attacked by the smut enemy, which, hidden entrance, lurks within the plant during time, when it again breaks forth in a recognized form. Only very young plants are susceptible to attack of the smut, therefore so treat the seed of the plants as to destroy the adhering spores of the fungus without injuring the grain, we can enable the young plant to pass the critical stage of its existence in the field. Such treatment is necessary. Smut can therefore be practically eliminated from the field. Several kinds of treatment are given, but of all those known, that by far the best and cheapest.

TREATMENT.

Formalin can be purchased from a druggist at a cost of from 75 to 95 cents per pound. One gallon mixed thoroughly with forty to fifty gallons of water is sufficient to treat forty to fifty bushels of grain. To treat the grain, spread it in a thin layer on a clean barn floor and sprinkle with the diluted mixture, using either a spraying machine or a watering pot. Sprinkle so as to thoroughly and evenly wet the grain with the mixture. Then turn the grain over thoroughly a few times to insure even distribution and cover the pile with a tarpaulin, blankets or bagging, to keep the heat of the formalin within. The pile should remain from six to twelve hours in this way. The grain may then be readily dried by mixing with clean lime, and the lime may be removed by running-mill. The seed is then ready to sow. It may be stored, but in so doing it is liable to develop smut infection. The best way is to treat, then sow as soon as is practicable. In general, one gallon of mixture will suffice to treat one bushel of grain. The formalin should be used at the rate of one ounce to three gallons of water. Formalin is an irritating caustic which should

not be brought into contact with the skin in pure form. In diluted condition it is harmless.

If you try this treatment simply as an experiment, sow the treated seed in a definitely marked portion of your field, using all care to keep the treated seed free from smutted seed. If you are adopting this treatment for your whole sowing, it will be instructive if you will leave a small portion, say one or two drill-rows, with the same seed, untreated, thus enabling you to determine the real value of treatment. We would be pleased to have you send a letter to the Station stating the results of your treatment, its costs, labor involved, amount of smut in treated and untreated fields. The amount of smut should be very carefully estimated in per cent from an actual count in the field. F. L. STEVENS, Biologist, North Carolina Experiment Station, Raleigh.

A Visit to a Progressive Farmer's Home.

Messrs. Editors: Farmers, as a rule, do not stray far from their own homes. Nor is it advisable to be a run-about, but an occasional trip is good. To get away from home, to see how others do, tends to broaden the mind, give new ideas and generally stimulate a man to do better by his family and farm.

I recall a pleasant visit I made this summer. What I saw made such an impression on me I am tempted to describe it, believing it will be beneficial to others.

My host and I left the cars at the station and found his twelve-year-old daughter waiting for us; she had driven six miles to meet us and to take us to their home. The home is situated in a fine old grove. As we approach, the feeling of restfulness and quiet fall upon one, for certainly from the public road this home presents a most inviting place for a weary man to rest at. There are flowers, grass, trees, children, chickens, calves and other interesting objects in sight.

The wife is on the porch and bids us a hearty welcome.

At supper time when we went to the dining-room I saw two tables spread. Both were served alike, a duplicate dish of everything for supper being on each table. One table was the regulation height; there were seats here for father, mother, oldest son and oldest daughter and for the company. The other table was perhaps one foot lower, and low chairs to match, on which the six younger children sat in comfort. The second daughter presided at the head and the second son at the foot of the low table, while the small children were on each side.

It was a beautiful sight to note the perfect table manners of these little ladies and gentlemen. When the father asked a blessing from God, the Giver of all good, and each little head was devoutly bowed, the visitor felt the Christian spirit in that dining-room.

The next morning I rose early, for I wanted to see how the day starts off at this different home from any I had ever visited.

As I pass the cook room, I saw the mother and two daughters engaged in preparing breakfast. Out at the horse barn, the two oldest boys were attending to horses there. At the cow lot I saw young America industriously engaged—three little boys milked eleven Jersey cows; did it well, quietly and quickly. Milk cans were on a little wagon. Milking finished, wagon was pulled by two boys to separator room; the other boy brought the milking buckets; there these little fellows ran milk through separator, carried skim milk to calves and pigs, the mother taking charge of the cream.

I stood these boys against the wall and measured each. Here is the record:

Smith Floyd, ten years old, four feet four inches tall.

William Kerr, eight years old, four feet three inches tall.

Henry Alvord, six years old, three feet eight inches tall.

The last name sounds like dairy work, does it not?

A trip over this farm is interesting and instructive. In a scrub pasture a flock of goats are busy nipping away at bushes, seemingly aware of the fact that they were saving backaches for the man who would have to grub that field to fit it for cultivation. Near by was a flock of fine sheep on other land not yet in cultivation; farther away more uncultivated land was fenced, and here a herd of grade short-horn cattle had all they could eat—goats, sheep, cattle, growing into money at an expense of fence only. (There are thousands of acres of land in North Carolina now doing nothing which might be put to the same use.)

Wheat yield of this farm this year was 800 bushels; it was sold in July for \$1.13 per bushel. The corn crop was fine, and showed good preparation and cultivation.

There are numerous small branches on this farm. Adjacent to these are long strips of mowing land producing grass for hay, whereas, if cultivated, the corn or grain would often be destroyed by water and the soil washed away. (Here is a good idea for all farmers owning branch land to think about.)

I saw two teams hauling manure. My son who was with me thought it "funny" to see that rich stable manure spread on gullies and poor spots, but this farmer was doing the proper thing. Make the poor spots fertile and average up the entire field.

You see here a thinking man, one who lays plans and works to them. He is a man held in high esteem by his neighbors, elder in his church, active in school matters, concerned about the welfare of his country and State, a Christian and good citizen. It is a pleasure to visit such a man and hear him talk about men and affairs.

C. C. MOORE.

Mecklenburg Co., N. C.

From "The Sage of Harmony."

Well, Mr. Editor, your first number of "The Progressive Farmer and Cotton Plant" came to hand all right and like it very much. I am sorry to say that we have very few progressive farmers in York County. If we had our county filled up with this class of farmers, there would not be house room for the immigrants that would wish to settle in our midst. Now, brothers (as I call all farmers), we must make all of our farms self-sustaining before we will be entitled to this progressive name.

The war in our nation broke me up for some years. At the heels of the war I had to start where I had been when I wed my partner at the altar. We were well matched as far as property was concerned: neither of us had anything but a sound body and a willing mind. But we made our lands that we cultivated produce everything that we had to eat and wear and had a large surplus to sell of everything—except children. And we had nine of them in number—six daughters and three sons. And this reminds me of the old saying, "A rich man for luck; a fool for fun, a negro for gourds, an Indian for dogs, and a poor man for children."

Now, brother farmers, there are three essentials that you must have in progressive farming. First, the very best improved seed of every kind; second, thorough preparation. And what I mean by preparation is not to break your subsoil too wet nor too dry, then the deeper you plow with grabs the better. Never plant anything until you are convinced that every clod has been pulverized from the bottom of your subsoil to the surface. If you can't break all with a harrow, break them with the back of the hoe. Then cultivate the first time with small plows, as deep as you please; and after the first time use small short grab plows with scrappers behind the heel screw. Never let your row get higher than your middles, except in very wet bottom land. Broadcast all of your manures whether you put two hundred or a thousand pounds to the acre. Plow your crop one week and hoe it the next. Never let the grass and weed seed come up, but kill it in the germ. And in so doing you will make more with less expense and less hurry and less money than you have ever done. And afterwards, you will be called a progressive farmer.

W. R. HAYES.

York Co., S. C.